5.0 Undertakings

USARAK has proposed one major range development project, and USAG-AK has proposed several smaller projects on lands at Fort Wainwright's Donnelly Training Area (DTA). The DTA's major range development project, the Battle Area Complex (BAX), is a range designed for gunnery training of vehicle-mounted weapon systems and dismounted infantry platoons, either independently of or simultaneous with supporting vehicles. 51 sites assosated with this project were evaluated for eligibility to the National Register of Historic Places, pursuant to 36 CFR 800.

The smaller projects within the DTA included; Upgrade Vehicle Access at Bolio Lake, Designation of Three Engineer Digging Sites, Battalion Forward Operating Base Upgrades, Timber Sale and 3 road upgrade projects (Windy Ridge Road, Meadows Road, and the Old Richardson Highway).

Archaeological surveys of the proposed projects were conducted in May, June, July, August and September of 2005. A total of 39 new archaeological sites were identified and recorded in the areas surveyed during the 2005 summer field season.

Archaeological field crews, comprised of employees of the Center for Environmental Management of Military Lands (CEMML, Colorado State University), conducted surveys of areas potentially impacted (both directly and indirectly) by proposed undertakings and conducted the testing to determine eligibility for listing in the NRHP. Five archaeological survey crews each comprised of four archaeologists, conducted the work in the DTA. The DTA archaeologist, Aaron C. Robertson and Julie Raymond-Yakoubian were the supervising archaeologists for these projects.

Table 2. General survey results for DTA

	2002	2003	2004	2005	**Total**
Areas Accessible for Archaeological Survey	600,271	600,271	600,271	600,271	**600,271**
Number of Field Crew	16	16	8	20	**60**
Total Acreage Surveyed	10,872	29,404	2,223	10,118	**52,617**
Recorded Archaeological Sites	100	116	10	39	**265**
Number of Sites Evaluated for Listing in NHRP	20	5	32	51	**108**
Number of Sites Eligible for Listing in NHRP	8	1	19	15	**43**
Percentage of Land Surveyed	2%	5%	<0.5%	2%	**9%**

5.1 Battle Area Complex (BAX)

The BAX is designed for gunnery training and would meet qualification requirements of crew-served, vehicle-mounted weapon systems. The BAX range would also support dismounted infantry platoon tactical live-fire operations, either independently of or simultaneous with supporting vehicles. Units would acquire skills needed to detect, identify, engage and defeat stationary and moving targets in a tactical array. Primary features of the BAX include course roads with crossover capability, stationary armor targets, moving armor targets, stationary infantry targets, moving infantry targets, machine gun bunkers and breaching obstacles. All targets would be fully automated and the event-specific target scenario would be computer-driven and scored from the control facility. The range operating system would be fully capable of providing instrumented after-action reviews. In addition to the range, the BAX would include an after-action review facility, ammunition breakdown building, ammunition loading dock, operations/storage building, arctic latrines, bleacher enclosure, bivouac and unit staging area, covered mess area, building information systems, electric service, water and septic system, storm drainage and general site improvements.

There are three alternatives being considered for the siting of these projects: Texas Range, Eddy Drop Zone and Donnelly Drop Zone (Figure 2). On March 17, 2006 USARAK released the BAX/CACTF Supplemental Draft EIS listing Eddy Drop Zone as its preferred alternative.

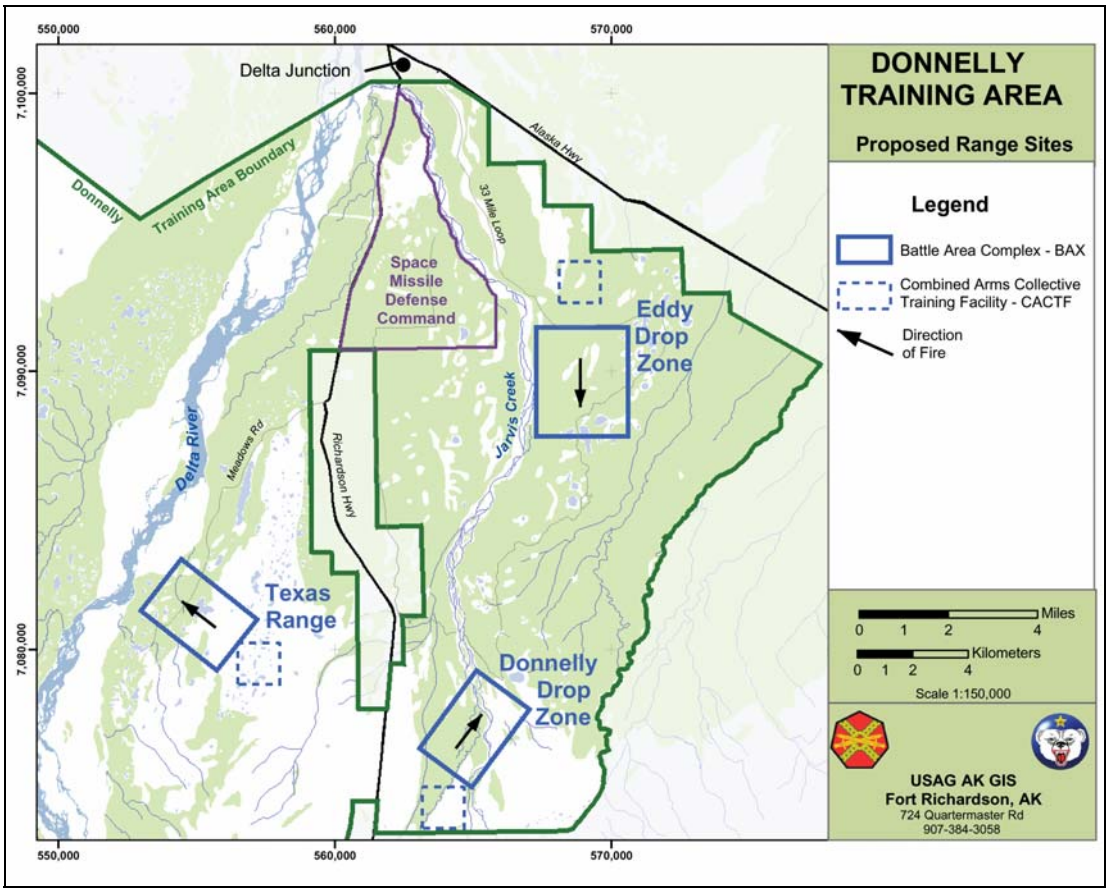

Figure 2. Location of the three BAX alternatives

5.1.1 Survey History for BAX Project

Survey for the construction footprints of the three BAX alternatives was conducted in 2002 and 2003 (Hedman et al. 2003; Robertson et al. 2004). The focus in 2003 was completion of the surveys for the firing fans or "surface danger zones" for the alternatives. The firing fan for the Texas Range alternative is located in an active impact area and was not surveyed due to safety concerns. The firing fans for the Eddy Drop Zone alternative (firing south) and Donnelly Drop Zone alternative (firing north) overlap and this area received the majority of the resources for survey in 2003 (Robertson et al. 2004). The focus of the 2004 field season was to start the site evaluations and determinations of eligibility (DOEs) for listing in the National Register of Historic Places (NRHP) for sites located in the construction footprint and firing fans for the three alternatives of the BAX project (Raymond-Yakoubian and Robertson 2005b). The focus of the 2005 field season was to continue the site evaluations and DOEs for listing in the NRHP for sites located in the construction footprint and firing fans for the three alternatives of this project.

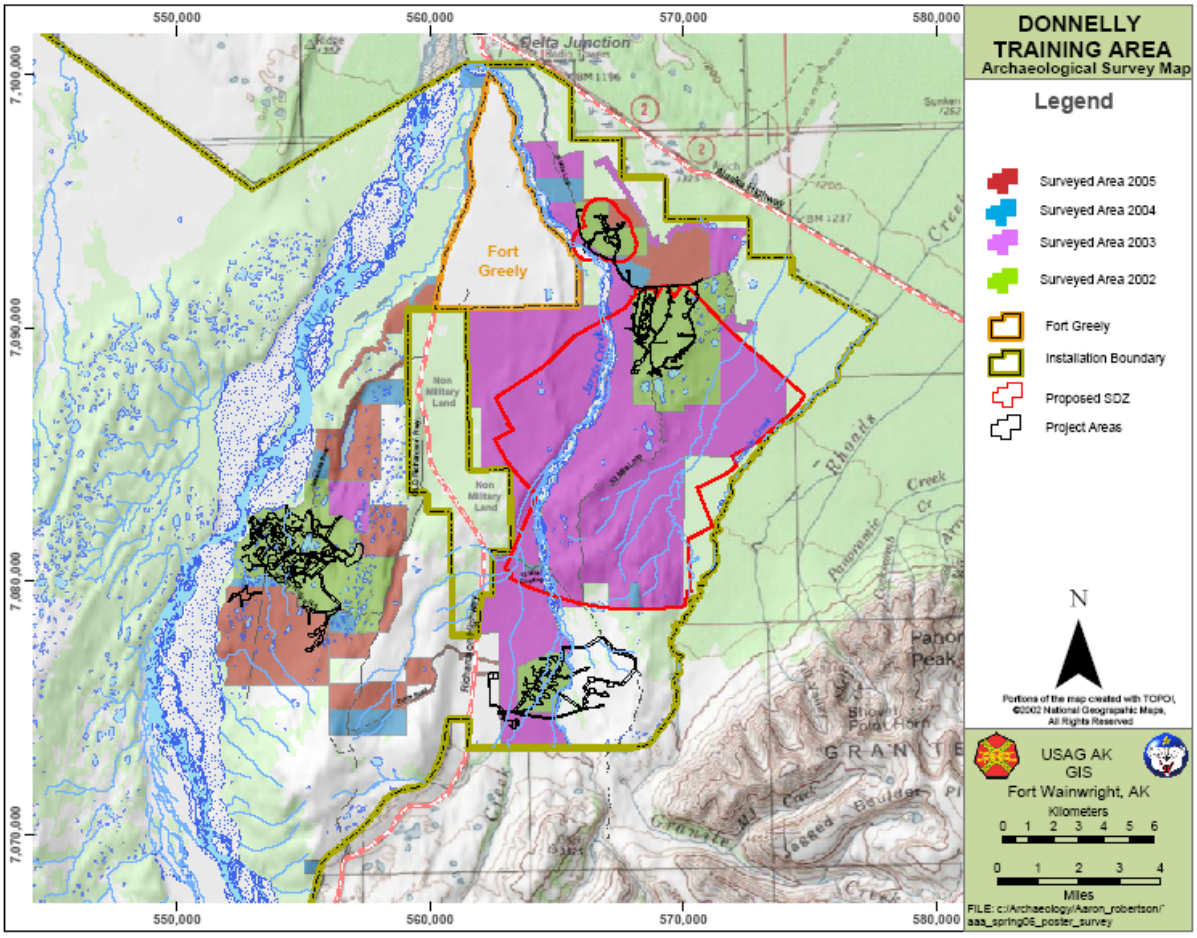

Figure 3. Location of the three BAX alternatives and history of survey for the BAX/CACTF project

A full description of the evaluations to determine eligibility for inclusion in the National Register of Historic Places conducted in 2005 field season are listed below:

SITE #	Location	NRHP STATUS
XMH-00012	Texas BAX	Eligible
XMH-00265	Texas BAX	Eligible
XMH-00266	Texas BAX	Eligible
XMH-00267	Texas BAX	Not Eligible
XMH-00293	Texas BAX	Not Eligible
XMH-00325	TexasCACTF	Not Eligible
XMH-00930	Texas BAX	Eligible
XMH-00931	Texas BAX	Eligible
XMH-00933	Texas BAX	Eligible
XMH-00934	Texas BAX	Not Eligible
XMH-00935	Texas BAX	Not Eligible
XMH-00936	Texas BAX	Not Eligible
XMH-00937	Texas BAX	Not Eligible
XMH-00938	Texas BAX	Not Eligible
XMH-00942	Texas BAX	Eligible
XMH-00943	Texas BAX	Not Eligible
XMH-00944	Texas BAX	Not Eligible
XMH-00946	Texas BAX	Eligible
XMH-00947	Texas BAX	Not Eligible
XMH-00949	Texas BAX	Eligible
XMH-00950	Texas BAX	Not Eligible
XMH-00951	Texas BAX	Not Eligible
XMH-00952	Texas BAX	Not Eligible
XMH-00953	Texas BAX	Not Eligible
XMH-00954	Texas BAX	Not Eligible
XMH-00961	Texas BAX	Not Eligible
XMH-00962	Texas BAX	Eligible
XMH-00963	Texas BAX	Not Eligible
XMH-00964	Texas BAX	Not Eligible
XMH-00965	Texas BAX	Not Eligible
XMH-00966	Texas BAX	Not Eligible
XMH-00967	Texas BAX	Not Eligible
XMH-00968	Texas BAX	Not Eligible
XMH-00974	Texas BAX	Not Eligible
XMH-00975	Texas BAX	Not Eligible
XMH-00976	Texas BAX	Not Eligible
XMH-00977	Texas BAX	Eligible
XMH-00978	Texas BAX	Not Eligible
XMH-00982	Texas BAX	Not Eligible
XMH-01072	Donnelly BAX	Not Eligible
XMH-01073	Donnelly CACTF	Not Eligible
XMH-01173	Texas BAX	Not Eligible
XMH-01174	Texas CACTF	Eligible
XMH-01193	Texas CACTF	Not Eligible
XMH-01202	Texas BAX	Not Eligible
XMH-01208	Texas BAX	Eligible

XMH-01213	Texas BAX	Eligible
XMH-01214	Texas BAX	Not Eligible
XMH-01215	Texas BAX	Eligible
XMH-01270	Texas BAX	Not Eligible
XMH-01271	Texas BAX	Not Eligible

XMH-00012
Latitude:
Longitude:
Determination: Eligible

Site XMH-00012 is located on a northwest-southeast trending moraine. The nearest water source is Beaver Lodge Lake, which is located 100m (meters) to the north. The view shed at the site is 180° to the southwest. Visible landmarks include the Alaska Range to the southwest, the Delta River to the west-northwest, Windy Ridge to the east and Beaver Lodge Lake to the north. Surface visibility at the site is estimated to be 75 percent.

Site XMH-00012 consists of 85 flakes and eight tools. The site was identified in a 1964 survey when seven tools (including two biface fragments) and 31 flakes were recorded on the surface of the site (West 1967). All of the original 38 artifacts were collected and are presently being housed at the University of Alaska Museum. The site was evaluated in 2005 and one tool and 25 flakes were found on the surface and an additional 29 flakes were found subsurface in either shovel tests or test units. The tool, a unifacial scraper fragment, was collected and is 3.3cm long, 2cm wide and weighs 3g. Chert, basalt, quartz and rhyolite are present among the debitage.

Figure 4. General view of site XMH-00012, facing west

Shovel tests were systematically placed throughout the site area at intervals of 10m. Two shovel tests were placed at 5m intervals near the surface scatter. A third shovel test was placed at a 5m interval south of the site datum, on the edge of the landform. A total of 32 shovel tests were excavated. The depth of shovel tests varied, but all were excavated to glacial till. One shovel test was positive and contained two flakes which were found 0-7cm below the surface.

One 1m x 1m test unit was excavated at site XMH-00012. The test unit was placed 5m south and 1m west of the site datum, near the positive shovel test. The test unit was excavated in 10cm levels until glacial till was reached throughout the entire unit floor. The test unit contained 27 flakes, found in levels 1 and 2 at 0-5cm below the surface. No subsurface features were identified at the site. Soil thickness varied 2-41cm across the site. The top and southwest facing portions of the site have sustained considerable wind erosion, and soil deposition averaged only 5cm. Soil in this area consists of loosely compacted, dark brown, organically rich loess to an average depth of 5cm. Glacial till is encountered below this organic horizon and consists of yellow brown sandy loess with a high density of gravels and cobbles. Soil on the northeast facing portion of the site shows more deposition, averaging 20cm. Soil in this area consists of loosely compacted, dark brown, organically rich loess that is present to an average depth of 8cm. Below this organic horizon, the soil consists of moderately compacted brown loess with a low density of gravel and cobbles. Glacial till is encountered below this loess deposit and consists of loosely compacted yellow brown sandy loess with a high density of gravel and cobbles.

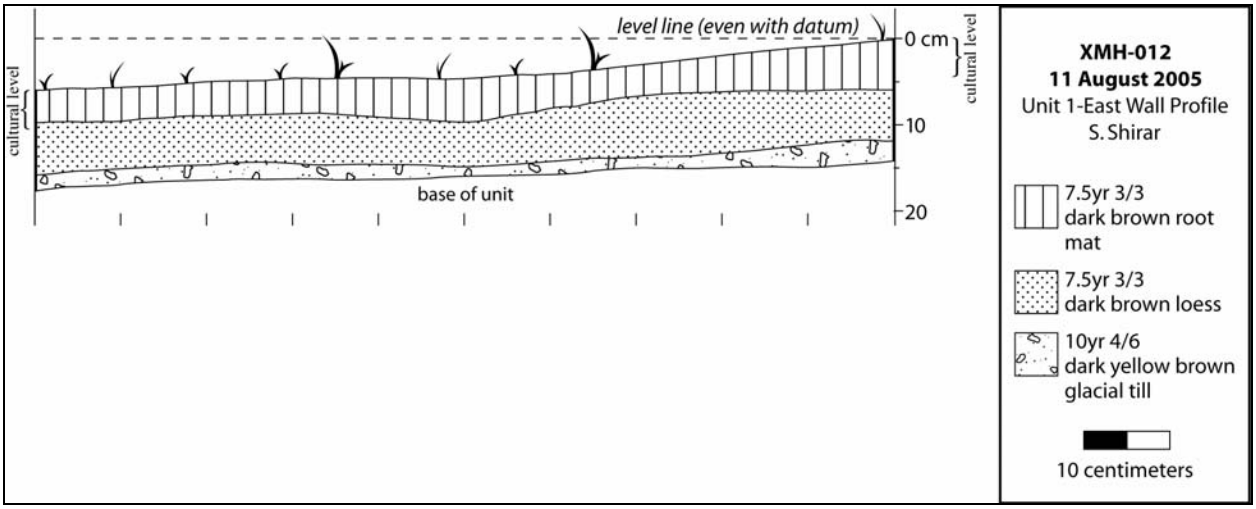

Figure 5. Soil profile of test unit from XMH-00012

Findings

A total of 85 artifacts were recorded at XMH-00012 from surface and subsurface contexts, in both shovel test pits and test units. Eight tools, including two biface fragments and one scraper fragment, were found on the surface. Materials at the site include chert, basalt, quartz and rhyolite. Based on the results of the survey and testing, the site area is estimated at approximately 12m x 20m.

Site XMH-00012 is a large lithic site with both surface and sub-surface components. With buried cultural material and multiple tool types, XMH-00012 is in an excellent position to contribute to our knowledge of prehistoric land use patterns. *In situ* artifacts and soil stratigraphy indicate datable material and diagnostic artifacts may be present and could be used to date human use of the site, potentially contributing to a broader regional context. Site XMH-00012 is an intact archaeological site with integrity. The site is eligible for inclusion in the National Register of Historic Places under criterion D, for its potential to yield information important in understanding the prehistory of the region.

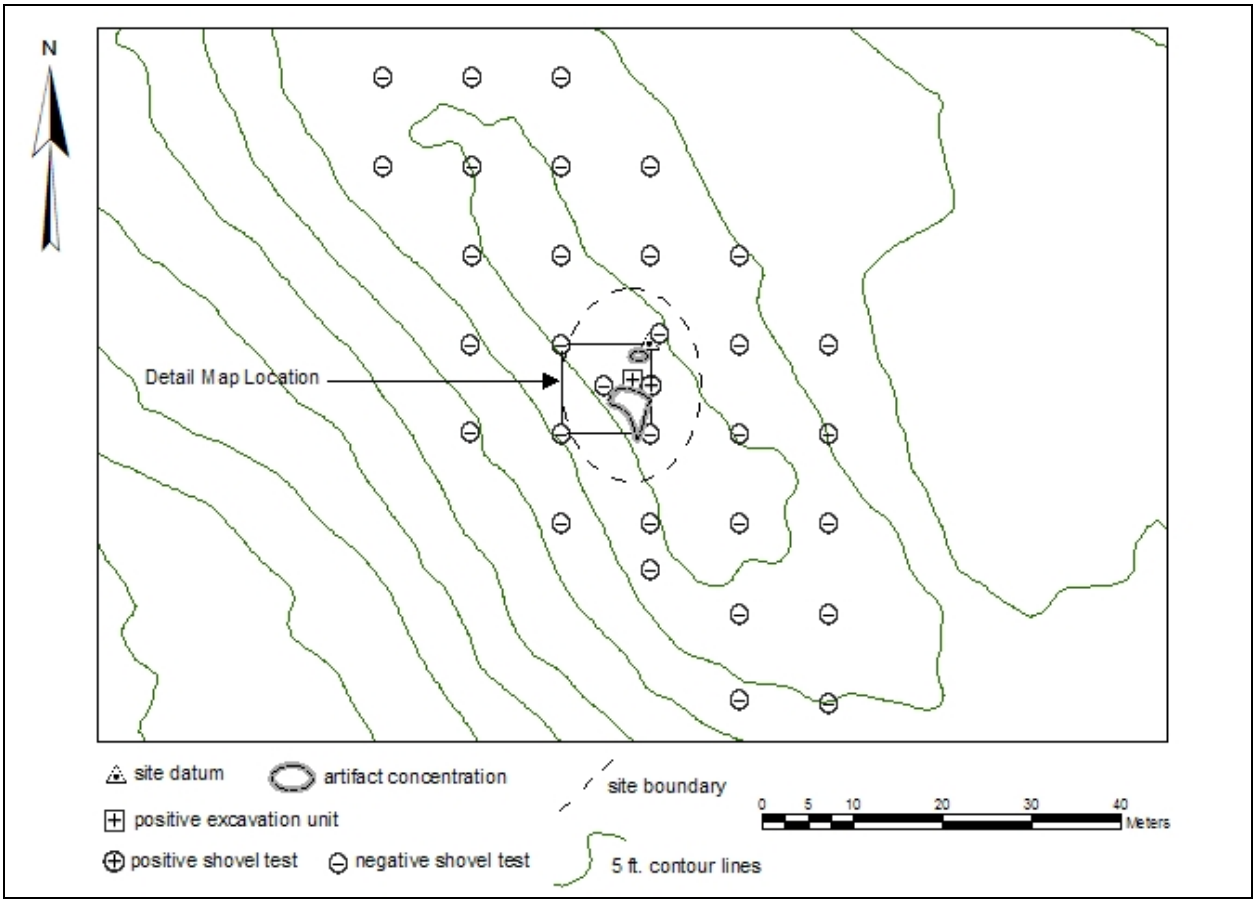

Figure 6. Site map from XMH-00012

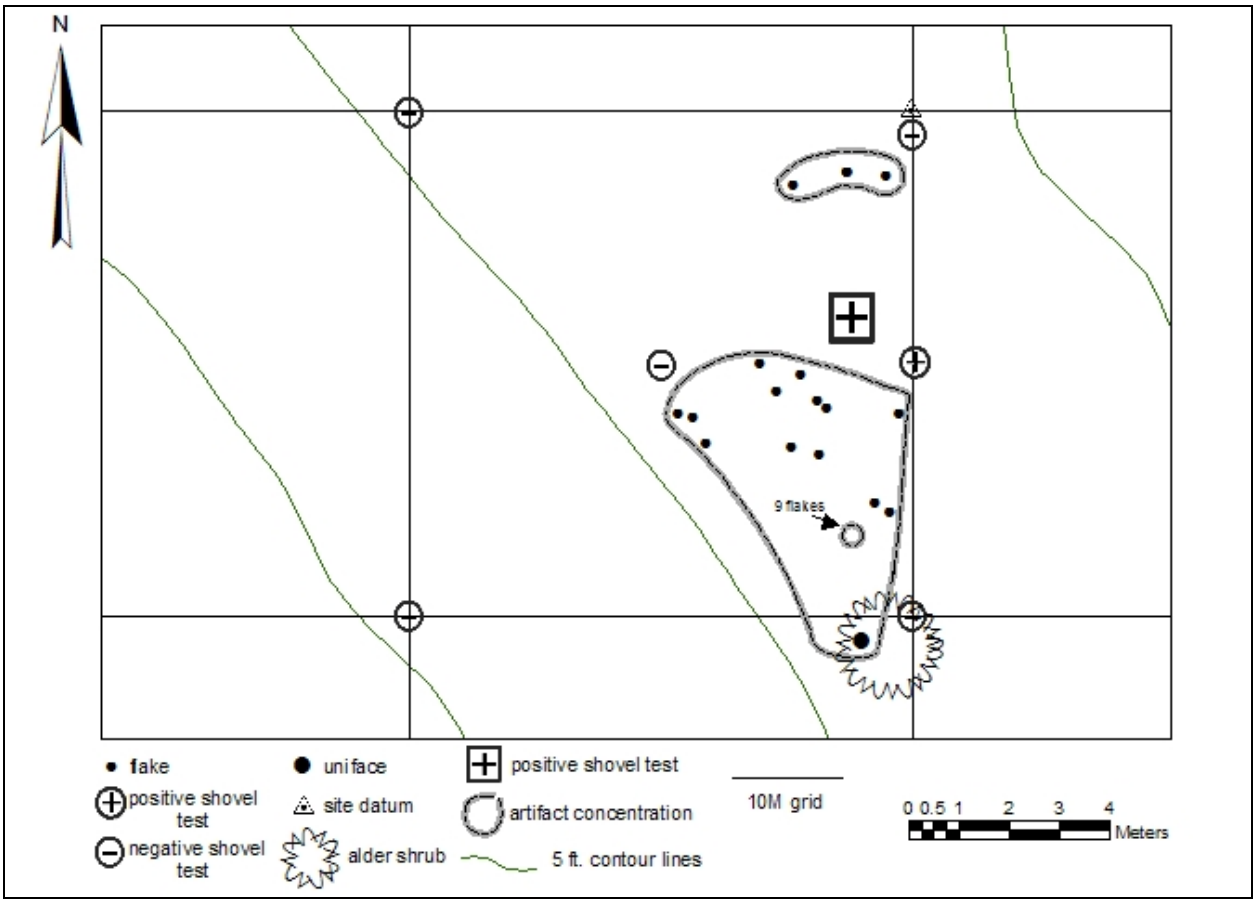

Figure 7. Detail map for XMH-00012

XMH-00265
Latitude:
Longitude:
Determination: Eligible

Site XMH-00265 is located on a small moraine on the southwest side of Big Lake. Big Lake is the closest water source and is situated at the eastern base of the landform upon which the site is located. The view shed at the site is approximately 360°. Donnelly Dome is visible to the south and the Alaska Range can be seen to the west and southwest. Surface visibility at the site is close to zero, with only a few small barren patches on the crest of the moraine along a foot trail.

Site XMH-00265 was identified in a 1979 survey when three gray chert flakes were found on the surface of a foot trail which crosses the moraine (Holmes 1979). This site was revisited in 2002, and 12 shovel tests were excavated on the landform; three of these test pits produced cultural material. Additionally, the 2002 crew noted a flake scatter to the west of the moraine (Hedman et al. 2003). These were most likely the flakes noted in 1979.

Site XMH-00265 consists entirely of lithic debitage. Artifacts include three surface flakes and 2 subsurface flakes (1 from the 2002 Phase I test pits and one small tertiary basalt flake

recovered from the Phase II test excavation unit). The 2005 crew was unable to relocate the surface flakes noted in the 1979 and 2002 surveys.

Figure 8. General view of site XMH-00265, facing south

Shovel tests were systematically placed throughout the site area at intervals of 10m during the 2005 evaluation. A total of 31 new shovel tests were excavated. The depths of the shovel tests varied, but all were excavated to glacial till. None of the 31 shovel tests were positive.

One 1m x 1m test unit was excavated at site XMH-00265. The unit was placed directly on top of the northernmost positive shovel test pit from the 2002 Phase I investigation. The unit was excavated in 10 centimeter (cm) levels until glacial till was reached throughout the entire unit floor. The unit contained 1 artifact, found 10-20cm below the surface. No subsurface features were encountered during the excavation of this unit. The stratigraphy of the test unit consisted of a 5cm in depth very dark gray root mat, on top of an approximately 10cm in depth very dark brown loess layer which contained the artifact, over an approximately 10cm in depth strong brown loess layer, and finally strong brown glacial till. The loess layers situated above till had a very low density of gravels and were moderately compacted. Glacial till was very compacted with a high density of gravel and larger cobbles. This soil profile is very similar to what was found in the shovel test pits located throughout the site. The soil thickness at the site was relatively uniform, ranging from 20- 40cm. The root mat over loess over till profile described above for test unit one holds true for the rest of the site, the only variation is in color. Some test pits showed a more yellow or redder brown loess and the same for till, although texture was consistent across the site.

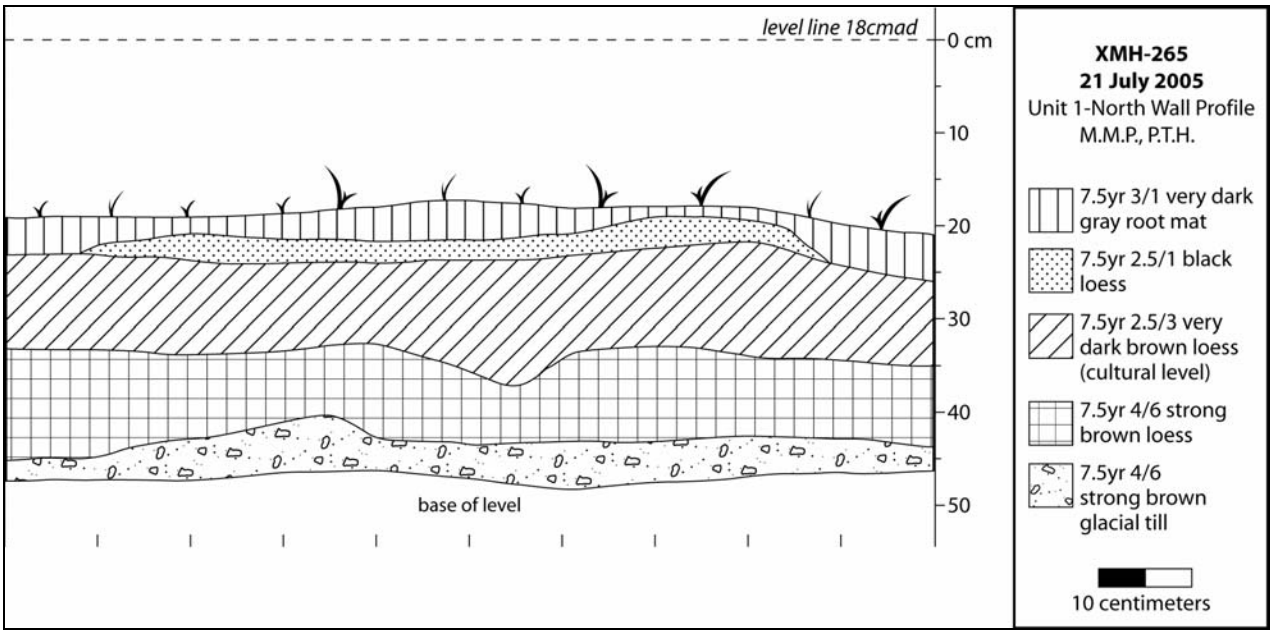

Figure 9. Soil profile of test unit from XMH-00265

Findings

A total of five artifacts were recovered from XMH-00265. Three were recovered from the surface and two were recovered from below the surface. The materials at the site include chert and basalt. Based on the results of survey and testing the site area is estimated at approximately 90m x 20m.

Site XMH-00265 is a small lithic site with both surface and buried components. With buried cultural material, XMH-00265 is in an excellent position to contribute to our knowledge of prehistoric land use patterns. *In situ* artifacts and soil stratigraphy indicate that datable material and diagnostic artifacts may be present and could be used to date human use of the site, potentially contributing to knowledge of human activity in a broader regional context. Site XMH-00265 is an intact archaeological site with integrity. The site is eligible for inclusion in the National Register of Historic Places under criterion D for its potential to yield information important in understanding the prehistory of the region.

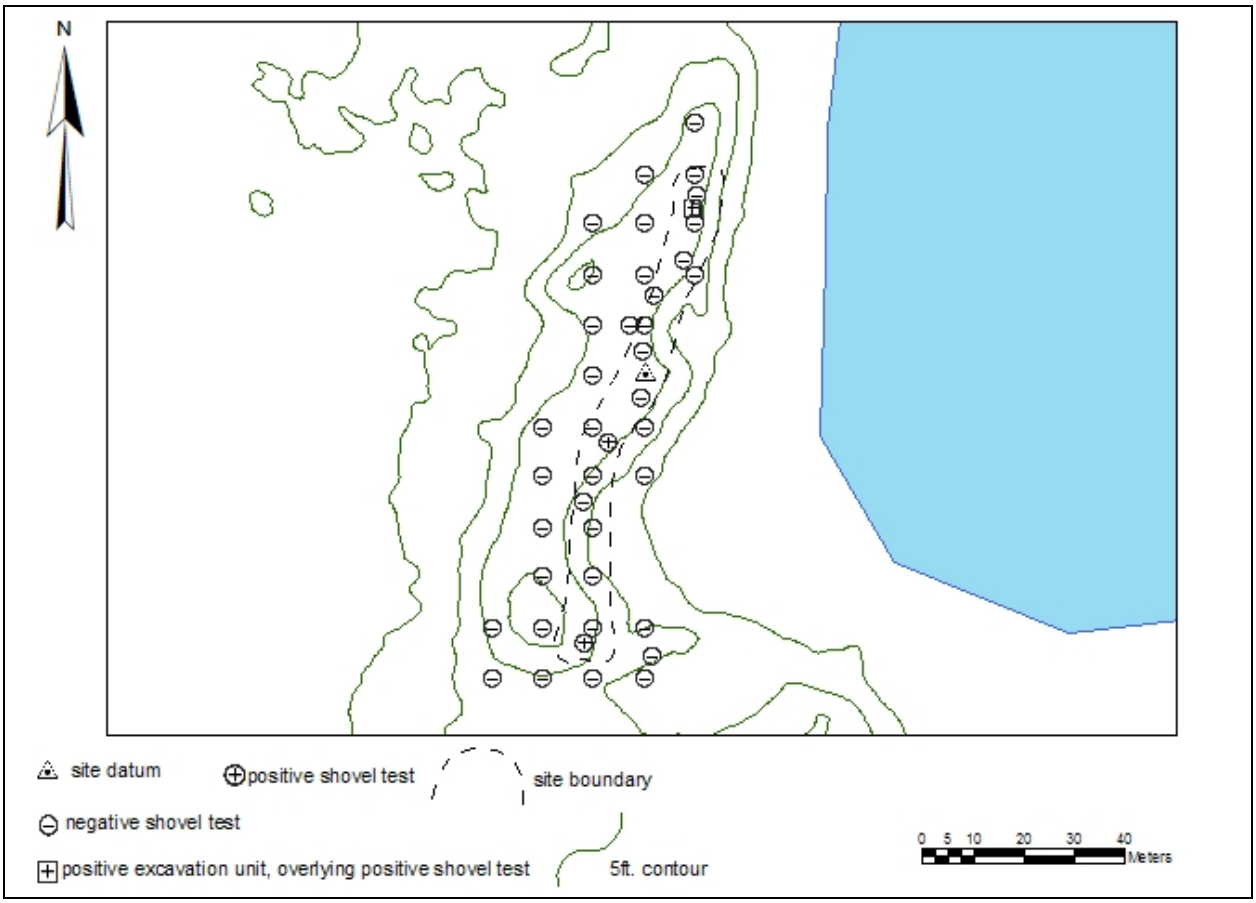

Figure 10. Site map from XMH-00265

XMH-00266
Latitude:
Longitude:
Determination: Eligible

Site XMH-00266 is located on a small moraine approximately 100m south of Big Lake. There are three water sources in close vicinity to the site: Big Lake, a small unnamed kettle pond 150m to the west, and another small unnamed kettle pond 200m to the east. Surface visibility is estimated to be one percent, with a few barren patches visible on the northwestern end of the moraine.

Site XMH-00266 was identified in a 1979 survey when fire cracked rocks, indicating a hearth, and butchered animal bones were observed in a test pit (Holmes 1979). This site was revisited in 2002 and several shovel tests were excavated on the landform; one black chert flake was found in a shovel test (Hedman et al. 2003). No surface artifacts were reported in either investigation.

Site XMH-00266 consists of over 525 artifacts, including one flake tool and two microblade fragments. All artifacts were found sub-surface in either shovel test pits or the excavation unit. In total, nine flakes came from shovel test pits and over 516 artifacts were located in the

excavation unit. Artifact materials were primarily gray basalt, with some chert and an unidentified material. Additionally, the test unit yielded several bone fragments.

Figure 11. General view of site XMH-00266, facing south

Shovel tests were systematically placed throughout the site area at intervals of 10m during the 2005 evaluation. A total of 37 new shovel tests were excavated. The depths of the shovel tests varied, but all were excavated to glacial till. Three of these shovel tests were positive. One positive shovel test yielded seven flakes, including one found in situ in the west wall at a depth of 20cm.

One 1m x 1m test unit was excavated at site XMH-00266 and was situated directly west of the positive shovel test with the in situ flake. The unit was excavated in 10cm levels until glacial till was reached throughout the entire unit floor. A total of 11 levels were excavated to bring the unit down to a uniform glacial till. No subsurface features were found during the excavation of this unit. Test unit 1 was covered by a very thick root mat. Under the organic mat was the mottled dark brown and dark yellowish brown moderately compact loess soil layer from which the majority of the artifacts came from. This layer contained a pocket of dark reddish brown loess of the same compactness in the western side of the unit. This soil layer was approximately 35cm thick, and overlaid a thinner (5-10cm) layer of dark yellowish brown loess. Below this was a gray mottled with dark yellowish brown loess layer of comparable thickness. Below this was a thick (30-40cm) layer of dark yellowish brown loess with small amounts of gray loess. This layer included isolated sand pockets of the same color. These were the most substantial layers lying on top of glacial till, which was very compacted with a high density of gravel and larger cobbles, and mottled gray and dark yellowish brown in color.

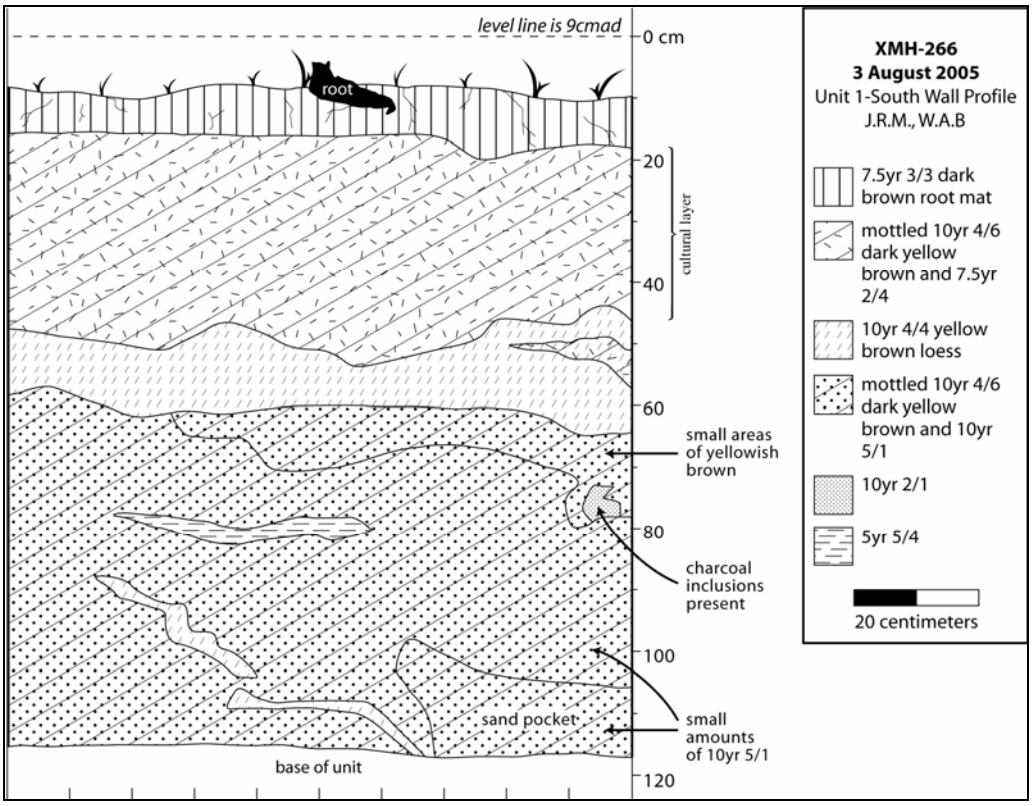

Figure 12. Soil profile from test unit at XMH-00266

Soil thickness at the site varied from very shallow on the top of the moraine, to deeper as the moraine went down in elevation. The stratigraphy was predominantly similar to that of test unit 1.

Findings

More than 525 artifacts were recovered from XMH-00266. All artifacts were recovered from below the surface, including one flake tool and two microblade fragments. Based on the results of survey and testing, the site area is estimated at approximately 10m x 40m.

Site XMH-00266 is a large, buried site with a dense concentration of late stage lithic debitage, formalized and expedient tools and bone fragments. With such a large amount of buried cultural material XMH-00266 is in an excellent position to contribute to our knowledge of prehistoric land use patterns. *In situ* artifacts and soil stratigraphy indicate datable material and diagnostic artifacts may be present and could be used to date human use of the site, potentially contributing to knowledge of human activity in a broader regional context. Site XMH-00266 is an intact archaeological site with integrity. The site is eligible for inclusion in the National Register of Historic Places under criterion D, for its potential to yield information important in understanding the prehistory of the region.

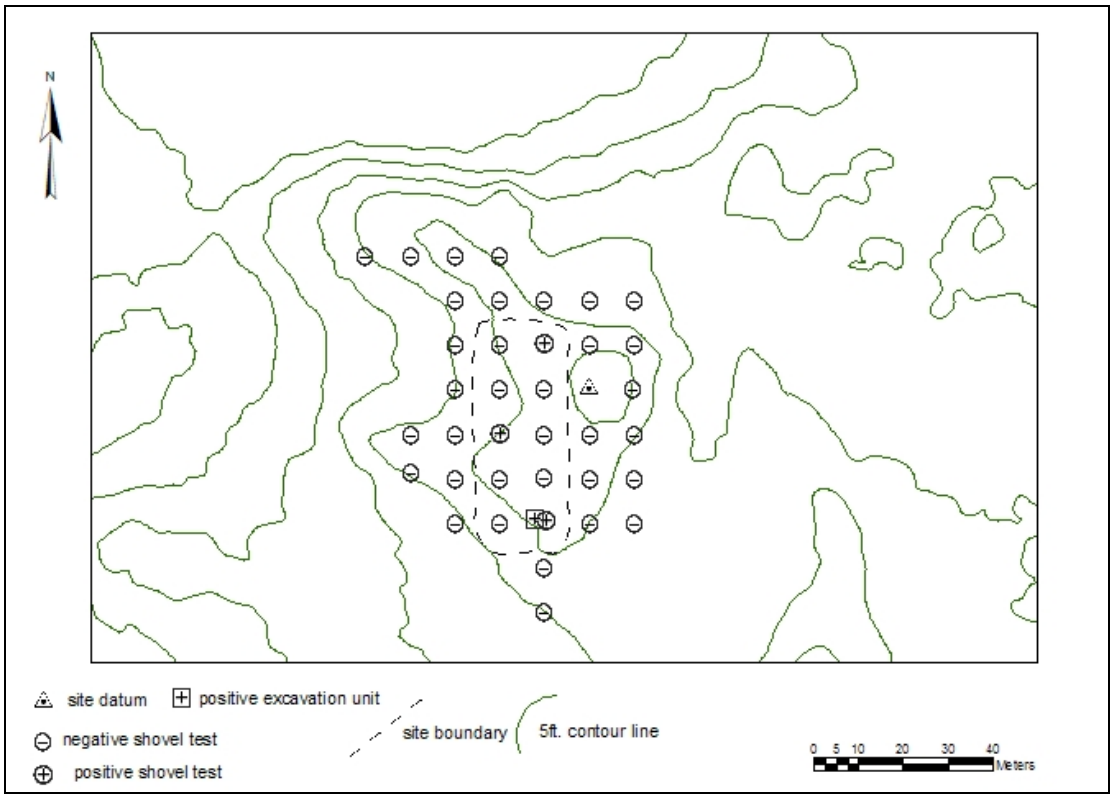

Figure 13. Site map from XMH-00266

XMH-00267
Latitude:
Longitude:
Determination: Not Eligible

Site XMH-00267 is located on a high glacial knoll. The nearest water source is South Twin Lake, which is located 100m away to the west. The view shed from the top of the site is approximately 180˚. Visible landmarks include Donnelly Dome to the south-southeast, the Alaska Range to the southwest, the Delta River to the west, Windy Ridge to the east and South Twin Lake to the west. Surface visibility at the site is 50 percent.

Site XMH-00267 consists of 28 flakes and three flake tools. The site was identified in a 1979 survey when two flake tools and 21 chert and rhyolite flakes were recorded on the surface of the site (Holmes 1979). All of the original 23 artifacts were collected and are presently being housed at the University of Alaska Museum. The site was evaluated in 2005 and seven more flakes of chert, rhyolite and basalt and one chert flake tool were located. The flake tool is 4.2cm long, 3.1cm wide and weighs 4g.

Shovel tests were systematically placed throughout the site area at intervals of 10m during the 2005 evaluation. A total of 37 new shovel tests were excavated. The depths of the shovel tests varied, but all were excavated to glacial till. None of the 37 shovel tests were positive and no new artifacts were found during the 2005 evaluation. Based on the results of the survey and testing, the site area is estimated at approximately 13m x 14m.

Figure 14. General view of site XMH-00267, heading southwest

Because none of the shovel tests were positive, no 1m x 1m test units were excavated at the site. No subsurface features were identified through shovel testing. Soil thickness varied 0-35cm across the site. Most of the landform exhibited extensive wind erosion resulting in very shallow deposition across the site, with only two shovel tests going deeper than a few centimeters. Shovel tests averaged a depth of 10cm across the site. Soil at the site consists of loosely compacted, dark brown, organically rich loess to an average depth of 3cm. Below this organic horizon, the soil consists of moderately compacted yellow brown loess with a low density of gravels and cobbles. Glacial till is encountered below this loess deposit and consists of yellow brown sandy loess with a high density of gravels and cobbles.

Findings

Pedestrian survey and 37 shovel tests produced a total of 31 surface artifacts. The paucity of cultural material indicates that XMH-00267 does not contain additional information that is important to our understanding of the prehistory or history of the region and is not eligible for inclusion in the National Register of Historic Places.

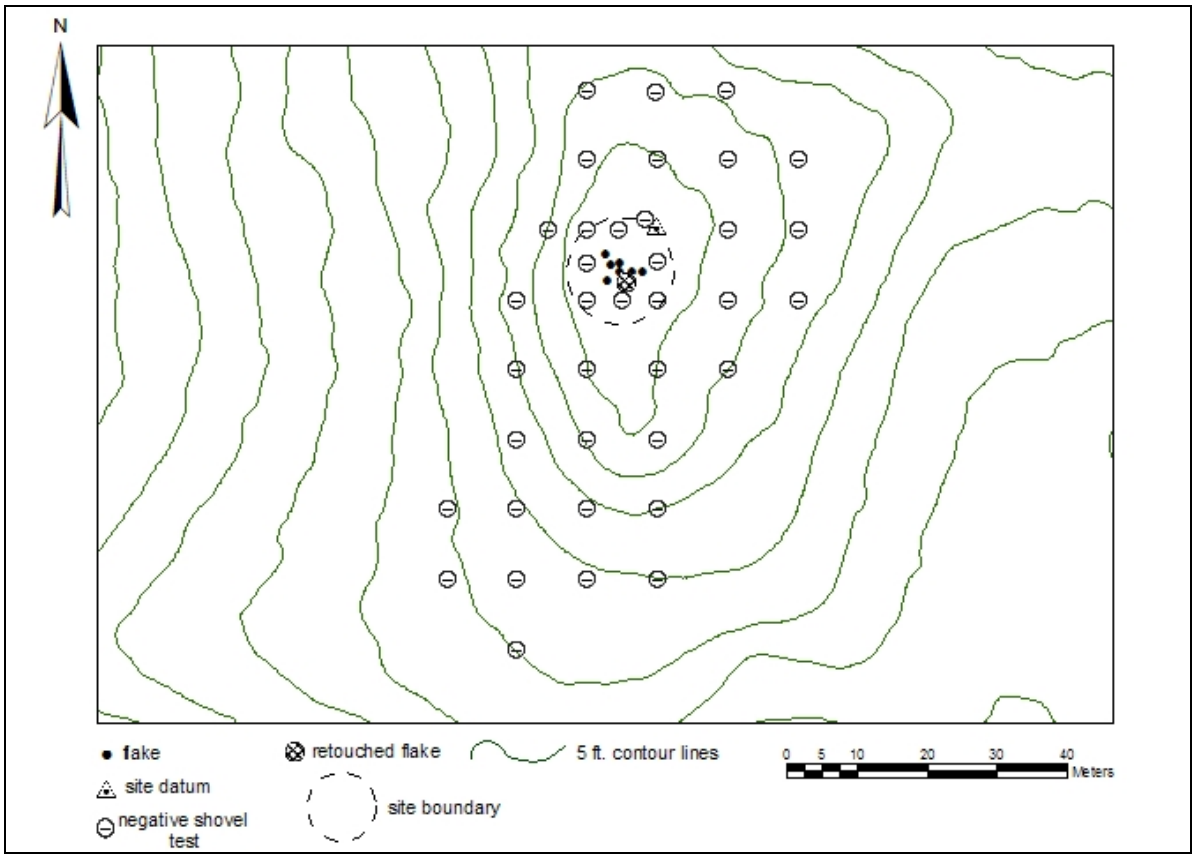

Figure 15. Site map of XMH-00267

XMH-00293
Latitude:
Longitude:
Determination: Not Eligible

Site XMH-00293 is located on the disturbed edge of a gravel pit, which was formerly the top of an east-west trending ridge. The nearest water source is a small, unnamed lake located 200 meters (m) to the southwest. The view shed at the site is limited due to surrounding vegetation, but the Alaska Range can be seen to the southwest. Surface visibility is estimated to be about 25 percent.

Site XMH-00293 was originally located in 1978 and consisted of a unifacial side scraper found in a disturbed area on the edge of the gravel pit (Holmes 1979). The artifact was collected during the original survey and has been accessioned to the University of Alaska Museum. This site was relocated during the 2005 field season and no new artifacts were located. No shovel tests were excavated at the site due to the lack of soil and high degree of disturbance.

Findings
Pedestrian survey produced a total of only one artifact. This finding suggests that XMH-00293 is an isolated find. The area where the tool was located is heavily disturbed by a gravel pit and has lost integrity. The paucity of cultural material and lack of integrity indicates that XMH-00293